
Crystal structure of the *Neisseria gonorrhoeae* MtrD inner membrane multidrug efflux pump.

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Public Summary:

Neisseria gonorrhoeae is an obligate human pathogen and the causative agent of the sexually-transmitted disease gonorrhea. The control of this disease has been compromised by the increasing proportion of infections due to antibiotic-resistant strains, which are growing at an alarming rate. The MtrCDE tripartite multidrug efflux pump, belonging to the hydrophobic and amphiphilic efflux resistance-nodulation-cell division (HAE-RND) family, spans both the inner and outer membranes of *N. gonorrhoeae* and confers resistance to a variety of antibiotics and toxic compounds. We here report the crystal structure of the inner membrane MtrD multidrug efflux pump, which reveals a novel structural feature that is not found in other RND efflux pumps.

Scientific Abstract:

Neisseria gonorrhoeae is an obligate human pathogen and the causative agent of the sexually-transmitted disease gonorrhea. The control of this disease has been compromised by the increasing proportion of infections due to antibiotic-resistant strains, which are growing at an alarming rate. The MtrCDE tripartite multidrug efflux pump, belonging to the hydrophobic and amphiphilic efflux resistance-nodulation-cell division (HAE-RND) family, spans both the inner and outer membranes of *N. gonorrhoeae* and confers resistance to a variety of antibiotics and toxic compounds. We here report the crystal structure of the inner membrane MtrD multidrug efflux pump, which reveals a novel structural feature that is not found in other RND efflux pumps.

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